



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,220	11/25/2003	Joon Tae Ahn	123056-05004472	4968
43569 7590 04/10/2007 MAYER, BROWN, ROWE & MAW LLP 1909 K STREET, N.W. WASHINGTON, DC 20006			EXAMINER DIACOU, ARI M	
			ART UNIT 3663	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			04/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,220	AHN ET AL.	
	Examiner	Art Unit	
	Ari M. Diacou	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. In the remarks filed 3-16-2007, applicant argued the following:
 - A. On page 4, that applicant has followed the examiner's suggestion and would like the 112 rejection withdrawn.
 - B. On page 4, that Kim does not read on claim 1 because in the applicants invention, "a fiber grating is mounted on only one side of a gain medium."
[emphasis original]
 - C. On page 5, that Kim's device produces an undesirable output ripple that the applicants invention does not.
 - D. On page 5, that "Nowhere does Bousselet disclose, teach, or suggest an optical amplifier located between the optical reflection means and the optical anti-reflection means, as recited in claim 1."
 - E. On page 6, that ASE is not routed as claimed in the invention of Bousselet.
2. Argument A is unconvincing, examiner's suggestion was: "constantly maintained regardless of a power level of the input signal" to "clamped", not the amendment that was filed.
3. Argument B is unconvincing, this limitation is not claimed.
4. Argument C is unconvincing, this limitation is not claimed.

Art Unit: 3663

5. Argument D is unconvincing, optical amplifier 20 is between anti-reflection means 11 and reflector 14.

6. Argument E is unconvincing, ASE gets generated by 20, get reflected by 3 go through coupler 12 and amplifier 20 and out 21.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1, 2, 5 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claim 1, it is impossible for any amplify to have a gain that is "clamped regardless of a power level of the input signal." Gain can always be saturated, and it is a certainty that all materials have a power threshold at which they will breakdown/melt/explode. Examiner suggest changing the offending phrase quoted above to "clamped", or find some other way to qualify the statement that doesn't include physical impossibilities.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3663

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 2, 5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (USP No. 6356685).

- Regarding claim 1, Kim discloses a gain-clamped optical amplifier comprising:
 - optical reflection means installed on an input optical fiber; [120]
 - optical anti-reflection means installed on an output the optical fiber opposite to the input optical fiber having the optical reflection means installed on; and [160]
 - an optical amplifier located between the optical reflection means and the optical anti-reflection means, for amplifying an input signal and an optical reflection signal [130]
 - wherein an amplified spontaneous emission light emitted from the optical amplifier to the input optical fiber is reflected by the optical reflection means installed in the input optical fiber and amplified in the optical amplifier; [Col. 2: 1-18, 48-65]
 - wherein the spontaneous emission light inputted to the input optical fiber and reflected by the optical reflection means is in a same direction as the input optical signal; and [Col. 2: 1-18, 48-65]
 - wherein a change in the input signal is compensated by the amplified spontaneous emission light such that a gain is constantly maintained

regardless of a power level of the input signal. [Definition of gain-clamping, see Col. 1: 43-55]

- Claims 2, 5 and 8 are clearly anticipated by Fig. 1.

11. Claims 1, 2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Bousselet et al. (USP No. 6466345).

- Regarding claim 1, Bousselet discloses a gain-clamped optical amplifier comprising:
 - optical reflection means installed on an input optical fiber; [14]
 - optical anti-reflection means installed on an output the optical fiber opposite to the input optical fiber having the optical reflection means installed on; and [11]
 - an optical amplifier located between the optical reflection means and the optical anti-reflection means, for amplifying an input signal and an optical reflection signal [4]
 - wherein an amplified spontaneous emission light emitted from the optical amplifier to the input optical fiber is reflected by the optical reflection means installed in the input optical fiber and amplified in the optical amplifier; [EDFA's can use their ASE as a pump]
 - wherein the spontaneous emission light inputted to the input optical fiber and reflected by the optical reflection means is in a same direction as the input optical signal; and [Col. 3: 50-63]

- wherein a change in the input signal is compensated by the amplified spontaneous emission light such that a gain is constantly maintained regardless of a power level of the input signal. [In EDFAs, gain (when unsaturated) is independent of input power.]
- Claims 2 and 5 are clearly anticipated by Fig. 2.

Conclusion

12. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

13. The references made herein are done so for the convenience of the applicant. They are in no way intended to be limiting. The prior art should be considered in its entirety.

14. The prior art which is cited but not relied upon is considered pertinent to applicant's disclosure.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ari M. Diacou whose telephone number is (571) 272-5591. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


A handwritten signature in black ink, appearing to read "Ari M. Diacou", is written in a cursive style.

Application/Control Number: 10/720,220

Page 8

Art Unit: 3663

3/31/2007


JACK KEITH
SUPERVISORY PATENT EXAMINER